

Amendments to the Specification:

Please replace the paragraph beginning at page 12, line 26, with the following:

--In one embodiment of antigen-APABP, as described in Example 1A, a nucleic acid was constructed that encodes a fusion protein, which contains amino acids 1-254 of LF (SEQ ID NOS: 1 and 2) and amino acids 1-511 of HIV envelope protein gp120 (SEQ ID NOS: 3 and 4). The nucleic acids were isolated using PCR and specific primers (SEQ ID NOS: 5-8) (SEQ ID NOS: 1-4) with restriction endonuclease sites at the ends. These sites were used to join the nucleic acids for LF and gp120. This recombinant nucleic acid construct was cloned into a GST expression vector, and protein was expressed and purified as described in Example 1A.--

Please replace the paragraph beginning at page 22, line 13, with the following:

--Construction of the plasmid used to express the LF-gp120 fusion protein in *E. coli* was performed as follows. The pGEX-KG vector (Pharmacia), which contains a glutathione S-transferase protein coding region, was ligated with PCR-amplified LF and gp120 gene sequences to produce a plasmid encoding a three-way fusion protein. The fusion protein contains the 26 kDa GST region, a 14 amino acid linker, amino acids 1-254 of LF (SEQ ID NOS: 1-2), and amino acids 1-511 of gp120 (SEQ ID NOS: 3-4).--

Please replace the paragraph beginning at page 22, line 19, with the following:

--The DNA encoding amino acids 1-254 of LF was amplified from plasmid pLF7 with primers that added unique XbaI and MluI sites on the 5' and 3' ends, respectively (Robertson & Leppla, *Gene* 44: 71-78 (1986)). The sequences of the primers were: 5'-TCTAGATCTAGAAGCGGCGGTCATGGTGATGTAGG-3' (primer 1, SEQ ID NO: 5 (SEQ ID NO: 1)) and

5'-GATCTTTAAGTTCACGCGTGGATAGATTTATTTCTTG-3' (primer 2, ~~SEQ ID NO: 6~~
SEQ ID NO:2).--

Please replace the paragraph beginning at page 22, line 27, with the following:

--The DNA encoding amino acids 1-511 of gp120 was amplified from plasmid HXB2-env with primers that added unique sites for MluI and PstI on the 5' end and unique XbaI and XhoI sites on the 3' end of the amplified gene (Page et al., *J Virol.* 64: 5270-5276 (1990)).

The sequences of the primers were:

5'-GCAAGACGCGTCTGCAGATGAGAGTGAAGGAG-3' (primer 3, ~~SEQ ID NO: 7~~ SEQ ID NO:3) and

5'-ATCCGCTCGAGTCTAGATTATCTTTTCTCTCTGCAC-3' (primer 4, ~~SEQ ID NO: 8~~
SEQ ID NO:4).

Primer 4 introduced a stop sequence (TAA) after the gp120 coding sequence.--

Please replace the paragraph beginning at page 25, line 3, with the following:

--The LF-gp120 fusion protein and PA were tested *in vitro* for their ability to deliver antigenic proteins to the cell cytosol for processing and presentation with MHC class I molecules on the cell surface. Mouse mastocytoma cells were used as the target antigen-presenting cell. Cytotoxic T lymphocytes that recognized the peptide epitope RGPGRRAFNTI RGPGRAFVTI (SEQ ID NO:5) from the V3 loop of gp120 were used with a ⁵¹Cr-release assay to examine specific lysis of the antigen presenting target cell population. Translocation-deficient mutant PA proteins or the absence of PA were used as controls to demonstrate that processing of the fusion protein relies on internalization via the PA receptor.--

Appl. No. 09/853,530
Amdt. dated September 25, 2006
Reply to Office Communication of August 17, 2006

Please replace the paragraph beginning at page 25, line 13, with the following:

--The following cell lines were used in this example. P815, a DBA/2 derived (H-2^d) mastocytoma (ATCC TIB-64) was used as target cells in the cytotoxic T lymphocyte (CTL) assay. These cells were maintained in RPMI1640 supplemented with 10% FCS. The HIV gp120-specific CTL line 9.23.3 that recognizes the V3 epitope RGPGRAFVTI (SEQ ID NO:5) that has been previously described (Takahashi et al., *Proc. Natl. Acad. Sci. U.S.A.* 85: 3105-3109 (1988); Alexander-Miller et al., *Proc. Natl. Acad. Sci. U.S.A.* 93: 4102-4107 (1996); Shirai et al., *J Immunol.* 148: 1657-1667 (1992)). Peptide P18IIIB that recognizes this epitope was made by an automated peptide synthesizer (Applied Biosystems) and purified by high performance liquid chromatography before use. The HIV gp120-specific CTL line was derived from BALB/C spleens taken from mice previously immunized with a recombinant vaccinia virus expressing the gp120 protein. 9.23.3 CTL were stimulated with 10 μ m free P18IIIB peptide at 5 x 10⁵ CTL, and 5 x 10⁶ irradiated spleenocytes [3000 rads (1 rad = 0.01 Gy)] per well, in a 24-well plate containing 2 ml of a 1:1 mixture of RPMI1640 medium and Eagle-Hank's amino acid medium (EHAA) supplemented with L-glutamine, sodium pyruvate, nonessential amino acids, penicillin, streptomycin, 5 x 10⁻⁵ M 2-mercaptoethanol, 10% fetal calf serum, and 10% T-stim (Collaborative Biomedical Products).--

Please insert the accompanying paper copy of the Sequence Listing, page numbers 1 to 2, at the end of the application.